

Algebra I Honors

* Answers * Unit 3 Study Guide

page 1

Solve & graph (check with a Test point)

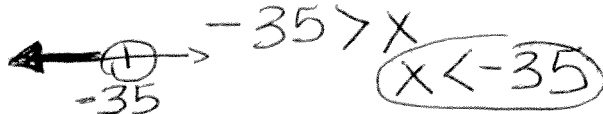
① $\frac{x}{-5} < -12$

$-5 \cdot \frac{x}{-5} < -12 \cdot -5$

$x > 60$ 


② $\frac{28}{-7} < \frac{-3}{5}x + \frac{7}{-7}$

$-\frac{5}{3} \cdot 21 < \frac{3}{5}x \cdot -\frac{5}{3}$

$-35 > x$
 $x < -35$ 

③ $\frac{-6}{+4} \leq \frac{-4}{+4} - x$

$\frac{-2}{-1} \leq \frac{-1}{-1}x$

$2 \geq x$ (same) $x \leq 2$ 

④ $-\frac{2x}{3} + \frac{5}{-5} \geq \frac{-1}{-5}$

$(-\frac{3}{2}) - \frac{2}{3}x \geq -6(-\frac{3}{2})$

$x < 9$ 

⑤ $7 - x > 3(2 - x) - 11$

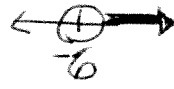
$7 - x > 6 - 3x - 11$

$7 - x > -5 - 3x$
 $+3x$ $+3x$

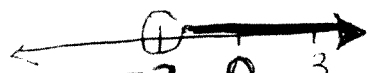
$7 + 2x > -5$
 -7 -7

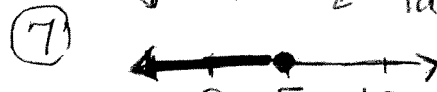
$\frac{2x}{2} > \frac{-12}{2}$

$x > -6$

$x > -6$ 

⑥ Write an inequality for the graph. #line labeled incorrect!


 $x > -3$

⑦ 
 $x \leq 5$

⑧ Solve for y

$3x - 4y = 10$
 $-3x$ $-3x$

$-4y = -3x + 10$
 -4 -4

$y = \frac{-3x + 10}{-4}$

⑩

Solve $(x-3) = \frac{x}{5}$

⑨ Simplify $-16 + 2 \cdot 7 - 6$
 $-4^2 + 2\sqrt{81} - 32 - 6$

$5(x-3) = 2x$
 $5x - 15 = 2x$
 $5x$ $-5x$
 $-15 = -3x$
 -3 -3

$5 = x$

Answer Sheet page 2

Word Problems Review Sheet

Directions: Write a proportion, equation, or inequality to help you solve each of the questions below. Then, find a solution. **SHOW ALL OF YOUR WORK!**

- ① Your cell phone plan costs \$59.99 per month for a given number of minutes. Each additional minute or part of a minute costs \$0.35. You budgeted \$80 per month for phone costs. What are the possible additional minutes (x) that you can afford each month?

Let x = additional minutes

\$57 min
or less

$$\begin{array}{r} 59.99 + .35x \leq 80 \\ - 59.99 \qquad \qquad - 59.99 \\ \hline \end{array}$$

$$\begin{array}{r} .35x \leq 20.01 \\ \div .35 \qquad \div .35 \\ \hline \end{array}$$

$$x \leq 57.17$$

$$x \leq 57 \text{ min}$$

- ② You are saving money for a summer camp that costs \$1800. You have saved \$500 so far, and you have 14 more weeks to save the total amount. What are the possible average amounts of money that you can save per week in order to have a total of at least \$1800 saved?

Let x = amount to save per week

$$500 + 14x \geq 1800$$

$$x \geq 92.86 \text{ (\$ round to hundredths)}$$

Save at least \$92.86 each week.

\geq (at least)

- ③ A gas station charges \$0.05 less per gallon of gasoline if a customer also gets a car wash. The price of gas is regularly \$3.69 a gallon and you decide to purchase a car wash for \$6.00. What are the possible amounts (in gallons) of gasoline that you can buy if you can spend at most \$50? Round your answer to the nearest 100th.

* x = gallons

$$\begin{array}{r} 3.69 \\ - .05 \text{ save} \\ \hline \$3.64 \end{array}$$

$$\begin{array}{r} 3.64x + 6 \leq 50 \\ 3.64x \leq 44 \\ \div 3.64 \qquad \div 3.64 \\ \hline \end{array}$$

$$x \leq 12.08$$

12.08 gallons or less

(* if $x < 12.09 \Rightarrow$ over 50)
50.01

at most
 \leq

- ④ You need to have at least \$100 in your checking account to avoid a low balance fee. You have \$247 in your account now and you make withdrawals of \$20 per week. What are the possible number of weeks that you can withdraw money and avoid paying the fee?

x = # of weeks to withdraw

$$\begin{array}{r} 247 - 20w \geq 100 \\ - 247 \qquad \qquad - 247 \\ \hline \end{array}$$

$$x \leq 7 \text{ weeks}$$

at least 100
 ≥ 100

Write the inequality

- ⑤ x is at most 1
 $x \leq 1$

$$\begin{array}{r} -20w \geq -147 \\ \div -20 \qquad \div -20 \\ \hline \end{array}$$

$$w \leq 7.35$$

- ⑥ a number is no less than 7. (7 is the lowest #)
 $x \geq 7$

- ⑦ Mrs. Rochester spent \$65 at the mall. Ms. Rochester spent more than Mrs. Roan. If x represents the amount Mrs. Roan spent, write an inequality.

x = Roan

$$x < 65$$

- ⑧ The maximum amount is \$55.
 $x \leq 55$
(can't be more)